Paradigmatic Morphology
Splinters, Combining Forms, and Secreted Affixes

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Splinters, combining forms, and secreted affixes are three morpheme (or morpheme-like) elements which are often conflated in the literature on English word-formation. Scholars have differently focused on their morphological origin (i.e. blending, paradigmatic substitution, analogy) or on their semantics (i.e. secretion vs. mere abbreviation) (Warren 1990; Fradin 2000; Mattiello 2007; Bauer et al. 2013).
This paper investigates these phenomena as part of paradigmatic morphology, or similarity among words. In particular, the investigation of five case studies (i.e. -(a)holic, docu-, -exit, -umentary, -zilla) shows that they are frequently used to create new words and even to produce series, through analogy via schema (cf. Köpcke 1993, 1998). In the paper, diachronic study combined with corpus-based analysis help us 1) categorise these phenomena as 'marginal' vs. 'extra-grammatical', and as 'productive' vs. 'creative', and 2) shed some light on their role in the development of morphological rules and in the expansion of the English lexicon.

Keywords: *Paradigmatic morphology, Splinters, Combining forms, Secreted affixes, Blending*

1. Introduction

This study deals with the part of morphology which is referred to as paradigmatic morphology, pioneered by van Marle (1985) and "based on some sort of resonance or similarity between words in the lexicon" (Bauer et al. 2013: 519). Phenomena of paradigmatic morphology are generally classified as "word creation" (Ronneberger-Sibold 2000, 2008) or "extra-grammatical morphology" (Dressler 2000; Mattiello 2013), as opposed to regular (i.e. productive) English word-formation (Bauer 1983; Plag 2003; Bauer et al. 2013).

The theoretical framework adopted in this study for the analysis of such phenomena is Natural Morphology (Dressler et al. 1987; Kilani-Schoch 1988; Dressler 2000; Kilani-Schoch & Dressler 2005). Within this framework, prototypical grammatical morphology is distinguished from both extra-grammatical and marginal morphology (Doleschal & Thornton 2000). Extra-grammatical morphology applies to a set of heterogeneous formations (of an analogical or rule-like nature) which do not belong to morphological grammar, in that the processes through which they are obtained are not clearly identifiable and their input does not allow a prediction of a regular output like rules do (Mattiello 2013: 1). For instance, the blends *brinner* ← *br*(eakfast + d)*inner* [2008] 'breakfast eaten at dinner time' (*Urban Dictionary*) and *blaxploitation* ← *bla*(ck + e)*xploitation* [1972] 'the exploitation of black people' (OED2) belong to extra-grammatical morphology, in that they are only partially predictable, whereas the regular derived words *mini-break* or *breaker* or the compound *blackbird* are fully predictable from their inputs. Within the same framework, marginal (but still grammatical) morphology applies to phenomena which are non-prototypical (i.e. at the boundaries) of morphology (Dressler 2000: 6–7), in that they are transitional between morphology and other linguistic levels (e.g. lexicon, syntax) or between the subcomponents of morphology (i.e. inflection, derivation, and compounding). For instance, the new words *read-o-holic* [2013]

(*The Guardian*) and *pizza-holic* [2015] (CNN) have been coined after the model of *workaholic* [1947], *sugarholic* [1955], *foodaholic* [1965], etc., all exhibiting the "final combining form" -(*a*)*holic* (← *alcoholic*, Warren 1990; called "suffix" in the OED). Specifically, combining forms are transitional between derivation and compounding, depending on whether we consider -(*a*)*holic* to be a bound or a free morpheme.

In particular, the study explores the creative formation of new words by means of the blending process. Blending is generally regarded as a "creative technique" (Ronneberger-Sibold 2008) used to produce new lexemes in domains such as humorous literary texts and brand names (Kemmer 2003; Lehrer 2003, 2007; Gries 2004, 2012). However, recent studies show that blends exhibit (sub)regularities and tendencies, especially in terms of prototypical patterns and phonological regularity (Mattiello 2013), prosodic structure (Arndt-Lappe & Plag 2013), but also of frequently occurring "splinters" (Lehrer 1996, 2007) or "secreted affixes" (Fradin 2000). Instances of splinters include -*arian* (← *vegetarian*), as in *fruitarian* [1893], *nutarian* [1909], etc. (OED2-3), *docu*- (← *documentary*), as in *docudrama* [1961], *docusoap* [1979], etc. (OED2–3), and -*exit*. The latter, despite its existence as an independent word, can be reinterpreted as an affix, especially a secreted one, whose meaning is not simply 'leave', but 'withdrawal from the European Union'. This meaning is illustrated both by English neologisms, such as *Grexit* ← *Greece*/*Greek* + *exit*, *Brexit* ← (*Great*) *Britain*/*British* + *exit*,[1] both dated [2012] in *Wordspy* and only included in the OED since March 2017, and by occasionalisms, such as the analogical *Spexit* or *Frexit* [2015] 'exit of Spain/France from the EU' recently found in *The Guardian*. The initial splinter counterpart is *Br*- (← *British*), as in *Bremain* or *Brentry* [2016] 'British remain/entry' (*The Guardian*), both obtained analogically after the model of *Brexit*. Analogy, therefore, is the underlying process of these new words, which suggest an analysis in terms of paradigmatic substitution (Bauer et al. 2013; Mattiello 2017).

This study deals with the creation of new words by analogy via schema (see "schema" in Köpcke 1993, 1998), with a set of prototypical words as model. In particular, the study concentrates on three very close products of analogy via schema – namely, splinters, combining forms, and secreted affixes – which are generally confused or partially overlap in the literature on word-formation, with morphologists using different labels to refer to equivalent phenomena, or focusing on different aspects of the same phenomenon, but disagreeing with others on various issues. By investigating these types of new morpheme or morpheme-like element, the study aims at showing that:

- Like productivity (Plag 1999; Bauer 2001), creativity is a scalar concept, ranging from low creativity, as when analogy combines with productive rules (see "creative compounds" in Benczes 2006; Franceschi 2013; Crawford Camiciottoli 2015), to high creativity, as in blending, where no rule applies.
- Analogy is not a strictly local phenomenon, but can give birth to productive series (cf. Bauer 1983: 96), as when splinters, combining forms, or secreted affixes become recurrent in the creation of new words.
- Hence, unlike ad hoc word-formation (see "Ad-hoc-Wortbildung" in Hohenhaus 1996), splinters may trigger a schema model, which is not as abstract as rules, but may represent the first step towards the development of a rule.

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[1] See Milizia (2014) for the original portmanteau word *Brixit*, which later developed into *Brexit* probably because of the increased similarity with *Grexit*.

Some research questions which will be addressed in this study include:

1) What is the difference between splinter and combining form or secreted affix?
2) Assuming that (Lehrer 2007: 121) is correct that "the transition from splinter to independent morphemehood is a diachronic process", can intermediate stages be identified between novel splinter and fully productive, transparent morpheme?
3) When do we have a shift from a unique model to a set of words as model? (cf. "local" vs. "extended analogy" in Klégr & Čermák 2010; "surface analogy" vs. "analogy via schema" in Mattiello 2017)
4) Is analogy via schema the first phase of the development of a rule?

Corpus-linguistic quantitative analyses in English corpora will provide evidence of the frequency and productivity of some novel splinters, combining forms, and secreted affixes in English. Lexicographic and diachronic study will help shed some light on their origin and categorisation, and, more generally, on the development and expansion of the English lexicon (see Miller's 2014 "lexicogenesis"). In other words, corpus-based analyses should help us discriminate between new words formed by surface analogy, with one precise word that acts as model, from those based on a schema, with several concrete words as model. Moreover, among cases of analogy via schema, or series, quantitative analyses should also clarify the difference between novel splinters and more established combining forms or even suffixes. We hypothesise that the shift from novel splinter to new productive morpheme is a gradual diachronic process, with intermediate stages involving semantic reinterpretation and generalisation.

2. The theoretical landscape

English word-formation has been studied by many scholars (Adams 1973; Bauer 1983; Štekauer 2000; Plag 2003; Štekauer & Lieber 2005; Bauer et al. 2013), whose attention was primarily focused on morphological grammar. Another field of study in morphological research pertains to word creation, which "refers to all operations for the production of new lexemes which are not covered by regular word formation" (Ronneberger-Sibold 2008: 201), including "creative techniques" such as shortening or blending. For these and related creative techniques, Baldi & Dawar (2000: 963) have used the label "unconventional word-formation", in that blending and abbreviations are out of ordinary (conventional) norms and rules, whereas Zwicky & Pullum (1987) classify them as "expressive (vs. plain) morphology", on account of their pragmatic effect. According to Hohenhaus (1996), blending and acronyms are part of what he calls "Ad-hoc-Wortbildung" (ad hoc word-formation), that is, the creative formation of new words, often by means of direct analogy. Aronoff (1976: 20) groups together clippings, blends, and acronyms under the label "oddities", while Bauer (1983: 232) calls them "unpredictable formations", though emphasising that they are so common in English that "it is misleading to consider them out of the ordinary". The present study explores the relationship between blending and the analogical process, showing how the latter affects the former, conferring regularity on blends and increasing their degree of predictability.

In a volume on lexical creativity, Lehrer (2007: 116) defines blends as "underlying compounds which are composed of one word and part of another, or parts of two (and

occasionally three) other words", adding that each word part in a blend is called "splinter". In this study, the term 'splinter' will be likewise used as synonymous with 'blend's part' (cf. its broader sense in Bauer et al. 2013).

Blends have been variously studied for their contribution to neology (Kemmer 2003; Lehrer 2003), for their prosodic structure (Gries 2004, 2012), and their preferred contexts of use, namely literary texts and product names. For instance, in Richard Lederer's book *Adventures of a Verbivore®*, the latter is a blend that merges *verb* and (h)*erbivore*, and, similarly, the creative name of the fruit-flavoured drink *Fruitopia®* originates by blending *fruit* and (u)*topia* (both in Lehrer 2007: 129–130).

While blends are similar to compounds in that they merge two or more words into one, their irregularity and only partial predictability make them out of ordinary English word-formation rules, i.e. extra-grammatical. Hence, blends exhibit a higher degree of creativity than creative (analogical) compounds. Indeed, creativity is a scalar concept (cf. Plag 1999; Bauer 2001; see Ladányi's 2000 productivity-creativity scale) and can involve analogy. For instance, Benczes (2006: 6) labels "creative compounds" those compounds which are based on metaphorical or metonymic associations, such as *scarlet-collar* (worker) [2000] 'a woman who operates an Internet pornographic site' (*Wordspy*), inspired by *white-collar* (worker), *blue-collar* (worker) and similar complex words. However, the formation of the compound adjective *scarlet-collar*, based on the compound family X-*collar* (Mattiello & Dressler forth.), is more predictable and less creative than the formation of a blend such as *boatel* ← *boa*(t + ho)*tel* [1950] 'a boat which functions as a hotel' (OED3), after the unique model *motel* ← *mo*(tor + ho)*tel*.

Nonetheless, recent approaches to blends have conferred some regularity on blends, by claiming that morphological and prosodic factors can influence their structure. For instance, Mattiello (2013) stresses that the prototypical blending pattern retains the initial part of one source word and the end of another, as in *smog* ← *sm*(oke + f)*og* [1905] (OED2). Moreover, Arndt-Lappe & Plag (2013) have proved that 1) blend's length most often conforms to the length of the longer source word, and 2) there seems to be a preference for blends to have no more than three syllables. In this paper, we assume that the regularity and partial predictability of blends are also connected with some frequently occurring splinters, such as *-ercise* ← (ex)*ercise*, found in *sexercise* [1942] 'sexual activity regarded as exercise' (OED3), *dancercise* [1967] 'dancing performed as an exercise' (OED2), and *boxercise* [1985] 'a form of aerobic fitness routine incorporating exercises from boxing' (OED3). As Lehrer (2007: 121) observes: "[w]hen a splinter becomes so common that people start using it frequently, it may lose its connection with the source word and can be considered a morpheme in its own right".

Nowadays some of these splinters have become so common and productive in English that they deserve the label of "combining forms" (Warren 1990) or "secreted affixes" (Fradin 2000). This regularity in use is connected with the analogical process.

2.1 *Blending and analogy*

Although blends should not be confused with, nor conflated with the analogical process (cf. Bauer 1983), some blends are created by analogy or similarity with others. Similarity may be with a unique word: for instance, the above-mentioned *brinner* and *blaxploitation* (see § 1) respectively share the beginning and the end with their models *brunch* ← *br*(eakfast + l)*unch* and *sexploitation* ← *sex* + *exploitation*. Alternatively, analogical words may belong to a series sharing the same formation: e.g., *Frexit* ← *Fr*(ance) + *exit*, *Germexit* ← *Germ*(any) + *exit*, and

Spexit ← *Sp*(ain) + *exit* are all based on *Grexit* and *Brexit* (*The Guardian*, 2015), with the shared portion *-exit* acquiring a specific meaning 'exit from the EU'. With a different shared portion *Br-*, we find, besides the above-mentioned *Bremain* and *Brentry*, the recent *Bremorse* and *Bregret* 'a sense of remorse/regret for leaving the UK' (*The Independent*, 2017). Related humorous wordplays are *BrexPitt* 'the end of Brad Pitt and Angelina Jolie's marriage' and *Bakexit* 'the BBC's loss of The Great British Bake Off' (*The Guardian*, 2016).

The two types of similarity relationships that we find in the above blends can be accommodated within the model of analogy elaborated in Mattiello (2016) and refined in Mattiello (2017) for word-formation. Specifically, Mattiello (2017) distinguishes between:

- Surface analogy (after Motsch's 1981: 101 "Oberflächenanalogie"; cf. "local analogy" in Klégr & Čermák 2010: 235): i.e. the word-formation process whereby a new word is coined that is clearly modelled on an actual model word (e.g. *brinner* after *brunch*);
- Analogy via schema (see Köpcke 1993, 1998 for "schema" in inflectional morphology; "extended analogy" in Klégr & Čermák 2010: 235): i.e. providing a pattern for a series of formations (e.g. *-ercise*, *-exit*).

The focus in the present study is especially on analogy via schema. This type of analogy, based on concrete prototype words such as the *-exit* series, therefore differs from surface analogy, with a unique model (i.e. *brunch* is the only model for *brinner*), and both differ from rules, based on abstract templates. In other words, rules' templates are abstract models, whereas a schema is a concrete model identifiable as two or (preferably) more words. These words may constitute:

- A word family (Mattiello & Dressler forth.): i.e. a group of words sharing some of the same base(s) (e.g. *white-collar* [1911], *blue-collar* [1929], *pink-collar* [1975], *green-collar* [1992], OED3; Benczes 2006: 144–145);
- A series of words sharing the same formation (e.g. *-tainment* ← (enter)*tainment* in *docutainment* [1978] OED2, *infotainment* [1980] OED3, *edutainment* [1983] OED2, *advertainment* [2004] COCA).

2.2 *Series: The literature on splinters, combining forms, and secreted affixes*

In the literature, splinters, combining forms, and secreted affixes are all connected – in different degrees – with the blending phenomenon, with scholars who have shown their interest in these mechanisms since the 1990s.

According to Bauer et al. (2013: 519), splinters belong to paradigmatic morphology, in that they are used to form new words which have some sort of resonance or similarity with other words in the lexicon. They define splinters as "originally (mostly) non-morphemic portions of a word that have been split off and used in the formation of new words with a specific new meaning" (Bauer et al. 2013: 525). For instance, *-gate* ← (Water)*gate* was used with the meaning 'an actual or alleged scandal' (OED2) in words such as *Dallasgate* [1975], *Billygate* [1980], or *Monicagate* [1998], the latter included by Miller (2014: 89) in 'puns'. According to Mattiello (2017), the process that occurs in this word-formation type is a "paradigmatic substitution". In other words, *Monicagate* originated from the substitution of a

first name in the analogical proportion *Billy* (Carter): *Billygate = Monica* (Lewinsky) : X (X = *Monicagate*).[2]

Lehrer (2007: 116) also observes that, "[a]lthough a splinter is a clipping, it cannot occur alone, as a word", but this statement is contradicted by Bauer et al. (2013: 528), who claim that "when [splinters] do become more productive, they may even start a life as a free form". For instance, originally *-burger*, as in *cheeseburger* [1930], *chickenburger* [1936], and *beefburger* [1940], was a splinter coming from the reinterpretation of *Hamburger* (from the German city of *Hamburg*) as *ham + burger*, although there was neither semantic nor morphological connection with *ham*. Later, *burger* became an independent morpheme with the meaning 'patty served on a bun' (Bauer et al. 2013: 528), or simply used as 'a familiar shortening of hamburger', as in this quote from *The Observer* [1960]: "Recently the Hamburger has become just a '*burger*', and there are 'beefburgers', 'chefburgers', 'cheeseburgers', 'eggburgers' and even 'kingburgers'" (OED2).

Bauer et al. (2013) also claim that some splinters can be free forms, such as *exit* in *Brexit*, or *ware*. The latter commonly refers to 'articles of merchandise' in compounds (e.g. *glassware*, *tableware*), but acquires a distinct meaning 'software' when it is used in derived words (e.g. *courseware* [1978] 'computer programs designed for use in an educational course' OED2, *freeware* [1981], *shareware* [1983] 'software which is available free of charge' OED2–3). In the latter case, a compound analysis has to be excluded and a blend analysis *course/free/share* + (soft)*ware* is to be preferred.

Combining forms likewise belong to paradigmatic morphology, in that their origin is analogical. Warren (1990: 115) defines combining forms either as "elements which represent parts of other words" (e.g. *eco-*(logical) in *eco-damage*, (alco)-*holic* in *chocoholic*) or as "elements which from a purely formal point of view are not new morphemes, but which have novel meanings" (e.g. *-gate* 'political scandal').[3] According to this distinction, combining forms can be either abbreviated or secreted: the former are shorter substitutes for their longer counterparts in the combination, while the latter also involve a semantic specialisation. Thus, *eco-* is abbreviated, in that the meaning of *ecological* is entirely retained in *eco-damage*, whereas *-(a)holic* is secreted, in that, e.g. in *chocoholic*, only the semantic elements 'person addicted to' are kept from the meaning of *alcoholic*, but the semantic element 'alcohol' is not (Mattiello 2017: 41). Warren (1990) illustrates this distinction by using the examples of *cheeseburger* (abbreviation) and *fishburger* (secretion), both obtained from the combining form *-burger*. Indeed, while a *cheeseburger* is 'a hamburger with a slice of melted cheese' and could be analysed as *cheese + hamburger*, a *fishburger* is not 'a hamburger with fish', but 'a fried patty made of fish served in a bun'. This testifies that we are not facing a case of abbreviation from *fish + hamburger* (see Fradin 2000: 19–20 for the representations of these words). Therefore, the same combining form can accept either a blend analysis (when abbreviation occurs) or an analysis in terms of paradigmatic substitution and semantic specialisation (when secretion occurs).

Secreted affixes is another label used in the literature to define phenomena of paradigmatic morphology. Fradin (2000: 46) defines secreted affixes (or affix-like forms) as "forms where secretion takes place" and whose "semantics can always be traced back to the meaning of a model-lexeme": e.g., *-speak* ← Orwell's (New)*speak* used for 'a characteristic

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[2] A similar proportion could be envisaged with other *-gate* formations whose first element is the proper name, nickname, etc., of a person or organisation implicated in the scandal, such as *Cartergate*, *Floodgate*, *Stalkergate*, *Totegate*, etc. These concrete prototype words represent a schema model.

[3] Cf. neoclassical combining forms, such as *bio-* or *-logy*, from Latin or Greek, which are out of interest here.

mode of speaking', as in *computer-speak* [1968] 'computerese' (OED3), *techspeak* [1992] 'technical jargon' (OED3, s.v. *tech*), etc. Fradin (2000) also specifies that secreted affixes differ from blends in several respects. First, semantically, secreted affixes often involve the partial loss of meaning, while the semantic content is kept intact in blends. Second, unlike blends, they always involve abstraction. Third, phonologically, secreted affixes are uniformly obtained by shortening the beginning or the end of a model-lexeme (cf. the various blending patterns in Mattiello 2013).

Remarkably, Fradin (2000) includes among secreted affixes the same elements that are elsewhere described as combining forms (i.e. *-gate*, *-holic*, *-burger*) (e.g. by Warren 1990). However, the overlap is only with secreted combining forms, not with abbreviated ones. Thus, *Euro-* ← *Euro*(pean) in *Euromarket* [1953] (OED3), *nega-* ← *nega*(tive) in *negademand* [1973] (OED3), and *e-* ← *e*(lectronic) in *e-text* [1990] (OED3) are abbreviated combining forms which do not involve a secretion process. By contrast, *-gram* ← (tele)*gram* is a secreted affix (or a secreted combining form) which denotes 'a message delivered by a representative of a commercial greetings company', as in *kissogram* [1982] 'a greetings message sent through a commercial agency, which is delivered with a kiss' (OED2), and similar occasionalisms recorded in OED2: i.e. *Gorillagram*, *Rambogram*, and *strippergram*. An anomalous case is in *-exit*, which does not involve any abbreviation, but only secretion, i.e. the semantic specification 'withdrawal from the EU', and is used as an affix with this meaning in *Grexit*, *Brexit*, etc.

Admittedly, although splinters, combining forms, and secreted affixes can be grouped together as part of paradigmatic morphology, their categorisation and theoretical framing still deserve attention and detailed examination. For instance, one may wonder whether they belong to grammatical, extra-grammatical, or marginal morphology (the latter two defined in 1). The label 'splinter' was originally used only for word parts (Lehrer 1996), so it alludes to the extra-grammatical process of abbreviation involved in blending, whereas 'combining form' and 'affix' respectively refer to the word-formation processes of composition and affixation, generally regarded as grammatical. However, since they are placed at the boundaries between compounding and derivation, combining forms are rather viewed as part of marginal morphology (Dressler 2000; Mattiello 2013, 2017). Finally, secreted affixes stay, according to Fradin (2000: 54), outside morphology, in that they are extra-grammatical means of forming lexemes, although they actually involve a certain level of abstraction and regularity. These dissimilar or even divergent remarks confirm that the three phenomena under investigation here represent an area replete with complexities. The analysis carried out in section 4 is meant to bring more clarity to this area. The methodology for the analysis is explained in section 3.

3. Method

The new words analysed in this study include both neologisms and nonce words or occasionalisms (see Christofidou's 1994 "Okkasionalismen"). The former are new words meant to enrich the lexical stock of a language (Dressler 1993: 5028), whereas the latter are only used on one specific occasion, but are unlikely to become a permanent part of the vocabulary (see also Algeo 1991: 3; Bauer 2001: 39). The focus in this study is on the new words of present-day English, from the second half of the twentieth century to the current (twenty-first) century.

Initially, data selection was made manually, by collecting new words which exhibited a shared segment with others and which were potential candidates for an analysis in terms of paradigmatic substitution and analogy. Sources for data were primarily:

1) *The Oxford English Dictionary Online*, in its continuous update from the second (OED2) to the third edition (OED3);
2) Previous studies or paper dictionaries on the topic of blends and English neologisms (e.g. Algeo 1991; Green 1991; Lehrer 1996, 2003, 2007; Baldi & Dawar 2000; Kemmer 2003; Gries 2004, 2012; Bauer et al. 2013; Mattiello 2013, 2017; Miller 2014);
3) Existing websites on the new words that either have recently entered the English vocabulary or are on their way to, such as McFedries's *Wordspy.com*, or Peckham's *Urban Dictionary*.

For the corpus-based analysis, five case studies (i.e. *-holic*, *-zilla*, *docu-*, *-umentary*, and *-exit*) were selected and investigated in this order. The selection was based on their different classification in the OED, either as more recognised morphological forms (i.e. suffix, combining form) or as more volatile and less predictable ones (splinter or blend's part). Hence, we expected that corpus-based analyses and word frequencies could better clarify these terminological and morphological distinctions.

For the quantitative analysis, data collection and frequency investigation were machine-driven. Automatic search was carried out in two corpora of English, both retrievable from the Brigham Young University's website, namely:

1) *Corpus of Contemporary American English* (henceforth COCA), containing more than 520 million words (20 million words each year 1990–2015) and equally divided among spoken, fiction, popular magazines, newspapers, and academic texts;
2) *News on the Web Corpus* (henceforth NOW), containing 4.4 billion words of data from web-based newspapers and magazines from 2010 to the present time, and growing by about 5–6 million words of data each day (last accessed May 2017).

Each corpus allowed a search for a word or a word part. For the corpus frequency of splinters, combining forms, and secreted affixes, selection was made using the asterisk (*), either preceding or following the word part. Given the different size of the two corpora used for corpus-based analyses, token frequencies were also normalised, either per million words (pmw, COCA) or per billion words (pbw, NOW).

4. Analysis

The analysis conducted in the following subsections is both lexicographic and corpus-based and it is meant to aid categorise the elements selected (i.e. *-holic*, *-zilla*, *docu-*, *-umentary*, and *-exit*) either as productive morphemes with a well-recognised status or as creative non-morphemic elements which are part of the extra-grammatical processes of the language. The rationale behind the order of the case studies analysed is connected to the labels defining each of these elements in the OED, namely "suffix", "combining form", or "blend's part".

4.1 *Case study 1: -(A)HOLIC*

The first case study analysed in the section is -(*a*)*holic*, from *alcoholic* (with respelling, but also in the variant -*oholic*, with the same pronunciation), which is described in OED3 as a "suffix" "forming nouns (often humorous nonce-words) denoting a person who appears to be addicted to the thing, activity, etc., expressed by the first element". The following examples recorded in the OED are given in chronological order:

- *workaholic* [1947] 'a person addicted to working', *tobaccoholic* [1954], *milka-holic* [1955], *sugarholic* [1955], *cake-aholic* [1957], *chocoholic* [1961] 'a person who is addicted to or very fond of chocolate', *foodaholic* [1965] 'a compulsive eater', *golfaholic* [1971], *carboholic* [1973], *computerholic* [1977], *shopaholic* [1977] 'a compulsive shopper', *newsaholic* [1979], *spendaholic* [1982], *cruise-oholic* [1989], *sexaholic* [1994], and *rage-aholic* [2008] (OED).

This list shows that *workaholic* is probably the antecedent of all others and that -(*a*)*holic* has viewed its greater expansion between the 1950s and the 1970s. The OED also records a quote where -(*a*)*holic* is used as a converted noun – "Everybody is an '*olic*' of some kind, alcoholic, *sexaholic*, *workaholic*, *support-groupaholic*" (OED3, 1994), therefore illustrating its use also as an independent morpheme.

Corpus investigation appears to confirm these claims. In COCA, -(*a*)*holic* is frequently found in both well-established words (e.g. *workaholic*, *chocoholic*) and occasionalisms (e.g. *family-oholic*, *fatheraholic*, *fruitoholic*). Its use as a free form (*aholic*) is also recorded twice. A **holic* search in COCA gives the following results, arranged in order of frequency. Both token frequency and normalised (pmw) frequency are provided in round brackets. Different spellings – i.e. hyphenated or not – account for the same word.

- WORKAHOLIC (444/0.85 pmw), SHOPAHOLIC/SHOP-AHOLIC (62/0.11 pmw), CHOCOHOLIC/CHOCKAHOLIC (31/0.05 pmw), FOODAHOLIC/FOOD-AHOLIC (7/0.013 pmw), RAGE-AHOLIC/RAGEAHOLIC (5/0.009 pmw), SEXAHOLIC (5/0.009 pmw), SPENDAHOLIC (5/0.009 pmw), AHOLIC (2/0.003 pmw), BUYAHOLIC (2/0.003 pmw), GAMBLEAHOLIC/GAMBLAHOLIC (2/0.003 pmw), PLANTAHOLIC (2/0.003 pmw), SPORTSAHOLIC (2/0.003 pmw), DEALAHOLIC (1/0.001 pmw), DOREEN-AHOLIC 'person addicted to Doreen's pizza restaurant' (1/0.001 pmw), ELKOHOLIC (1/0.001 pmw), EVENTAHOLIC (1/0.001 pmw), FABRIC-HOLIC (1/0.001 pmw), FAMILY-OHOLIC (1/0.001 pmw), FATHERAHOLIC (1/0.001 pmw), FISHAHOLIC (1/0.001 pmw), FRUITOHOLIC (1/0.001 pmw), FUNDRAISE-AHOLIC (1/0.001 pmw), GOLFAHOLIC (1/0.001 pmw), GROWTHAHOLIC (1/0.001 pmw), HERBAHOLIC 'person addicted to spices' (1/0.001 pmw), HOARDAHOLIC (1/0.001 pmw), HOOPAHOLIC (1/0.001 pmw).

An additional search in NOW provides comparable results in terms of frequency and productivity. Normalised frequencies are given per billion words (pbw).

- WORKAHOLIC/WORK-A-HOLIC/WORKOHOLIC (2,273/0.59 pbw), SHOPAHOLIC/SHOPOHOLIC (479/0.12 pbw), CHOCOHOLIC/CHOCAHOLIC (199/0.05 pbw), SHAREAHOLIC (101/0.02 pbw), RAPPERHOLIC (65/0.01 pbw),

ECOHOLIC (19/0.005 pbw), RAGEAHOLIC/RAGE-AHOLIC (18/0.004 pbw), AQUAHOLIC (16/0.004 pbw), BOOKAHOLIC (16/0.004 pbw), SEXAHOLIC (16/0.004 pbw), MILKAHOLIC (13/0.003 pbw), SPENDAHOLIC (13/0.003 pbw), APPSAHOLIC (11/0.002 pbw), CRAFTHOLIC 'name of a company producing toys' (9/0.002 pbw), APPLEHOLIC (8/0.002 pbw), FOODAHOLIC (8/0.002 pbw), INFOHOLIC (8/0.002 pbw), SHOEAHOLIC (8/0.002 pbw), TWITTERHOLIC (8/0.002 pbw), COFFEEHOLIC (7/0.001 pbw), PLANTAHOLIC (7/0.001 pbw), SHOCKAHOLIC (7/0.001 pbw), TWEETAHOLIC (7/0.001 pbw), NEGAHOLIC (6/0.001 pbw), LOVE-AHOLIC (5/0.001 pbw), ROCKAHOLIC (5/0.001 pbw), SEEDAHOLIC 'name of a company's website selling seeds' (5/0.001 pbw), SUGARHOLIC (5/0.001 pbw).

This data shows that -(*a*)*holic* is not only a recognised element recorded in eminent dictionaries such as the OED, but also a morpheme attested in corpora and whose profitability is undeniable. The meaning associated to this morpheme – 'person addicted to' – entails a generalisation semantic process which accounts for its high level of abstraction. The bases to which -(*a*)*holic* is added are commonly nouns (*apple*, *coffee*, *plant*), even abbreviated ones (*apps*, *info*), rarely, personal names (*Doreen*), verbs (*spend*), or adjectives (*nega*(tive attitude) 'pessimism'). The pattern used to obtain new words, even occasionalisms, is regular and still novel words are predictable, both in form and in meaning.

4.2 *Case study 2:* -ZILLA

The second case study is *-zilla*, from *Godzilla* (an alteration of the Japanese film *Gojira* 'gorilla', reinterpreted as *God* + *zilla*), which is described in OED3 as a "combining form" "forming humorous, usually temporary words which depict a person or thing as a particularly imposing, relentless, or overbearing example of its kind". The examples recorded in the OED mostly include occasionalisms:

- *Hogzilla* [1978], *Bosszilla* [1988], *Bird-zilla* (referred to a turkey) [1993], *Bridezilla* [1995] 'a woman thought to have become intolerably obsessive or overbearing in planning the details of her wedding', *groomzilla* [2003], *mom-zilla* [2005], *thespzilla* [2007] (OED).

In the following quote, *-zilla* is added to a clipped word from *thesp*(ian), originally theatrical: "That was very Hollywood, however, and this is very British, especially those depressing streetscapes of north London, through which our ageing *thespzilla* stomps defiantly around in his old-geezer's woolly hat" (OED3, 2007).

Corpus investigation in COCA and NOW gives both neologisms (e.g. *bridezilla*, *momzilla*) and occasionalisms (e.g. *teenzilla*) as findings. Results from COCA are:

- BRIDEZILLA (32/0.06 pmw), DOGZILLA (11/0.02 pmw), COWZILLA (7/0.01 pmw), HOLLYZILLA 'name of a monster comparable to Godzilla' (2/0.003 pmw), MOMZILLA (2/0.003 pmw), NUNZILLA (2/0.003 pmw), GROOMZILLA (1/0.001 pmw), HOGZILLA (1/0.001 pmw), TEENZILLA (1/0.001 pmw).

Results from NOW include:

- BRIDEZILLA/BRIDE-ZILLA (269/0.07 pbw), SNOWZILLA 'name of a storm in the US' (76/0.02 pbw), GROOMZILLA (29/0.007 pbw), HOMERZILLA 'name of a doughnut-eating sea monster' (8/0.002 pbw), BATZILLA 'name of a rescue group saving bats and flying foxes' (7/0.001 pbw), BIRDZILLA (referred to an eagle) (7/0.001 pbw), FISHZILLA (referred to an aggressive fish species) (7/0.001 pbw), MUMZILLA/MOMZILLA (7/0.001 pbw), RATZILLA (5/0.001 pbw), BRIDESMAIDZILLA (4/0.001 pbw), DOGZILLA (4/0.001 pbw), FOODZILLA 'nickname of a chef obsessed with her kitchen's cleanliness' (4/0.001 pbw), CATZILLA (3/0.0007 pbw), HOGZILLA (3/0.0007 pbw), SHARKZILLA 'dangerous shark' (3/0.0007 pbw), BRANDZILLA (2/0.0005 pbw), BRIDEZILLA-GROOMZILLA (2/0.0005 pbw).

Corpus data shows that *-zilla* is a morpheme added to nouns (especially, types of animal or family members) to indicate 'an overbearing person or an aggressive species'. Although its frequency is more limited than that of -(*a*)*holic*, this element has undergone a secretion process allowing for the shift from *Godzilla* to a more general 'imposing or violent example of its kind', whose aggression is reminiscent of a large dinosaur-like monster. A metaphorical extension is in *brandzilla* referring to a 'powerful brand on the market'. Moreover, *-zilla* words tend to reproduce the prosodic pattern of the full form *Godzilla* in the paradigmatic substitution: e.g., *hog*, *boss*, *mom*, and *dog* are all 'god' replacements in the analogical proportion.

New *-zilla* words and their meanings are predictable because of the analogy with the above series (*Hogzilla*, *Bosszilla*, *Bird-zilla*, *Bridezilla*, *groomzilla*, *mom-zilla*), which originally functioned as a concrete model for new words. Diachronic study and corpus investigation, however, demonstrate that *-zilla* is going in the direction of abstraction and productivity.

4.3 *Case studies 3 and 4:* DOCU- *and* -UMENTARY

The word *documentary* provides two "blend's parts" – i.e. *docu-*, as in *docudrama* [1961], and *-umentary*, as in *mockumentary* [1965] – which are not given as main entries in the OED. This dictionary describes the two blends as respectively coming from *docu-*(mentary) + *drama* 'a documentary drama' and *mock* + (doc)-*umentary* 'a film, television programme, etc., which adopts the form of a serious documentary in order to satirize its subject'. Therefore, it does not recognise the status of the two splinters as new morphemes, although it also records comparable cases created by analogy with *docudrama*:

- *docutainment* [1978] 'a film which seeks both to inform and to entertain', *docusoap* [1979]/*docu-opera* [n.d.] 'a television documentary series following people in a particular location over a period of time' (OED); see also *documusical* [1974], *docuhistory* [1981], and *docurecreation* [1983] in Green (1991: 77);

or with *mockumentary*:

- *rockumentary* [1969] 'a documentary on the subject of rock music', *shockumentary* [1970] 'a documentary film with shocking subject matter', *soapumentary* 'a

documentary series dealing with domestic situations and frequently characterized by melodrama and sentimentality' [1993] (OED).

A corpus linguistic analysis confirms the frequency and use of both splinters. COCA offers the following examples of blends beginning in *docu-* or ending in *-umentary*:

- DOCUDRAMA/DOCU-DRAMA (185/0.35 pmw), DOCUSERIES/DOCU-SERIES (23/0.04 pmw), DOCU-OPERA (4/0.007 pmw), DOCUCOMEDY (3/0.005 pmw), DOCU-SOAP (3/0.005 pmw), DOCU-MUSICAL (2/0.003 pmw).

- MOCKUMENTARY (38/0.07 pmw), ROCKUMENTARY (10/0.01 pmw), COPUMENTARY 'documentary on police action' (1/0.001 pmw), DOGUMENTARY (1/0.001 pmw), SCHLOCKUMENTARY 'documentary on inferior material' (1/0.001 pmw).

Results from NOW for the same splinters are comparable:

- DOCUDRAMA/DOCU-DRAMA (1,508/0.39 pbw), DOCU-SERIES/DOCUSERIES (863/0.22 pbw), DOCU-SOAP/DOCUSOAP (94/0.02 pbw), DOCU-FICTION/DOCUFICTION (56/0.01 pbw), DOCU-REALITY (50/0.01 pbw), DOCU-FILM/DOCUFILM (45/0.01 pbw), DOCU-COMEDY (17/0.004 pbw), DOCU-MOVIE (9/0.002 pbw).

- MOCKUMENTARY/MOCUMENTARY/MOCK-UMENTARY (995/0.26 pbw), ROCKUMENTARY/ROCK-UMENTARY/ROCUMENTARY (119/0.031 pbw), DOGGUMENTARY/DOGUMENTARY (18/0.004 pbw), BRICKUMENTARY (11/0.002 pbw), SHOCKUMENTARY (11/0.002 pbw), VLOGUMENTARY (9/0.002 pbw), BLOCUMENTARY/BLOCKUMENTARY 'documentary on Lego building blocks' (6/0.001 pbw), DONUTUMENTARY (3/0.0007 pbw), SCHLOCKUMENTARY (3/0.0007 pbw), SPOCKUMENTARY (3/0.0007 pbw), etc.

It is worth noting that both splinters do not involve any secretion process, only abbreviation. In other words, they provide the meaning 'documentary' to the blends including them: while *docu-* coordinates with other genres, such as film/movie, drama, comedy, etc., the first element in *-umentary* words determines the type of documentary (e.g. on rock music, on shocking matters, on dogs, etc.). From the phonological viewpoint, *-umentary* words share rhyming or quasi-rhyming initial parts (*mock*, *block*, *schlock*, *spock*; *dog*, *vlog*), which increase the similarity between the new words and their models (*rock-* and *shock-umentary*) and encourage the formation of still novel words according to the same pattern.

4.4 *Case study 5:* -EXIT

The fifth case study (*-exit*) is neither attested in the OED nor in COCA as a formative one. The independent word is of course attested, but its use in blends has for long been disregarded by lexicographers, and only the NOW corpus offers pertinent examples, with the country's name functioning as abbreviated initial element given in brackets:

- FREXIT (from France, 135/0.03 pbw), NEXIT (from the Netherlands, 88/0.02 pbw), AUSEXIT/AUS-EXIT (from Austria, 27/0.007 pbw), DEXIT (from DE for 'Germany'/from Denmark, 25/0.006 pbw), ITALEXIT (from Italy, 22/0.005 pbw), IREXIT (from Ireland, 21/0.005 pbw), SWEXIT (from Sweden, 20/0.005 pbw), SPEXIT (from Spain, 16/0.004 pbw), EIREXIT (from Eire, 11/0.002 pbw), AMEXIT (from America, 9/0.002 pbw).

The OED has recently included *Brexit* and *Grexit* as neologisms formed "by compounding" *Gr*(eek) and *Br*(itish) with *exit*, in spite of the evident blending process intervening here. Although the quotes of both are from 2012 onwards, OED3 specifies that *Grexit* was originally the model for *Brexit*, now far more common than *Grexit*. Similarly, in *Wordspy*, these are the only examples recorded.

Results from corpus analysis show that *-exit* has not acquired productivity yet, but it might become an independent morpheme in the future, due to the specification process it undergoes when added to a country's name (i.e. 'withdrawal from the EU').

5. Discussion of results

The analysis of some cases of splinters, combining forms, and secreted affixes has helped us in their understanding and classification. According to the analysis conducted here, these are very close phenomena, and the same element may even represent different phenomena at different stages. For instance, in an earlier version of the OED, *-(a)holic* was labelled "combining form", while in the current version it is considered a "suffix", which has even been used as a converted noun (*olic*, *aholic*). By contrast, *-exit* has been included in the OED as a blend's part only since March 2017, when the updated version has recorded *Grexit* and *Brexit* as entries. Before that date, it was only included as an independent word.

While an actual and precise labelling of these elements is possible only synchronically, diachronically we can remark that for most of them there is an evolution, with various intermediate stages determining their changes from non-morphemic segments to actual morphemes. Originally, these elements were parts of blends, or SPLINTERS, which often merged with other word parts. For instance, the original splinter status of *-holic* is demonstrated by the fact that it was initially combined with other splinters (e.g. *choco*(late) or *carbo*(hydrates)), and *-zilla* similarly merged with a word part in *thespzilla*.

Splinters, or blend's parts, also have the characteristic of not involving reinterpretation, but mere abbreviation. Thus, for instance, *docu-* or *-umentary* contribute to the novel words *docuseries* or *dogumentary* the same meaning as the full word *documentary*. Thus, on the one hand, they are repeatedly used to obtain new words, both neologisms (*docusoap*, *rockumentary*) and occasionalisms (*docu-reality*, *donutumentary*), but, on the other, they have not acquired the abstraction of secreted forms.

SECRETED COMBINING FORMS, or SECRETED AFFIXES, by contrast, involve a secretion process, which often entails a semantic generalisation or, more infrequently, a specification process. For instance, *-(a)holic* is no longer connected to 'alcohol', but generally denotes 'a person addicted to what is specified by the first element'. In the same way, *-zilla* is a secreted form entailing semantic reinterpretation and referring to 'a particularly imposing person or thing'. That is, *-zilla* has lost its connection with the character of Godzilla and only retained some of its semantic features (e.g. violence, strength, aggression, or dangerousness).

Specification has instead occurred when the element *-exit* has been used in words such as *Grexit* and *Brexit*, specifically referring to 'the exit from the European Union or Eurozone'.

Abbreviation or secretion, however, are not the only discriminating factors helping distinguish splinters from secreted combining forms or secreted affixes. Frequency and productivity are additional criteria. That is, only when a splinter becomes frequently used and allows for abstraction, it can be considered an established combining form. Combining forms can be also mere abbreviations of longer words with no new meaning, such as *Br-* from *British*, or *Euro-* from *European*, but it is their regularity in use to determine the real productivity of these forms. *Euro-*, for instance, is a recognised ABBREVIATED COMBINING FORM, whereas *Br-* has acquired some regularity only in recent times, but only in the news and in a very limited number of words.

In fact, a corpus linguistics analysis of all the elements examined in section 4 has shown that they are not moderate in productivity, but highly productive and frequent (e.g. *shopaholic*, *dogzilla*, *docucomedy*, *dogumentary*, COCA; *shareaholic*, *groomzilla*, *docufiction*, *brickumentary*, *Frexit*, NOW). Needless to say, different degrees of productivity (vs. creativity) are displayed by secreted affixes/combining forms vs. abbreviated combining forms vs. splinters, the latter being less regular than the others, and hence representing the earliest step in the development of a rule.

6. The productivity of splinters, combining forms, and secreted affixes

Overall, the productivity of abbreviated or secreted forms such as splinters, combining forms or secreted affixes depends on three main factors:

1) the availability of a series sharing the same formation,
2) its potential to become a schema model for the creation of new words, and
3) the extent to which this schema is actually exploited in language use (i.e. profitability).

As far as availability is concerned, these forms are made available thanks to a process of "reinterpretation" (Hock 1991: 176), "reanalysis" (Hopper & Traugott 2003: 56), or morphological re-segmentation. For instance, *God-zilla*, *Water-gate*, and *ex-ercise* have been reanalysed as complex forms, whereas *docu-mentary*, *doc-umentary* (vs. *document + -ary*), *alco-holic* (vs. *alcohol + -ic*), and *eco-logical* (vs. *ecolog*(y) + *-ical*) have undergone morphological re-segmentation. Other comparable series involving reanalysis or re-segmentation include:

- *-kini* ← *bikini* [1947] (from the name of the atoll *Bikini*), reanalysed as *bi- + kini*, as in *monokini* [1964] 'a one-piece swimming costume' (OED3), *trikini* [1967] 'ladies' swimsuit which consists of three main areas of fabric' (OED2) (cf. *tankkini* [n.d.], Lehrer 2007: 131; *burkini* [2014], *facekini* [2017], *WWW*).
- *-wich* ← *sandwich* (from John Montagu, 4th Earl of *Sandwich*), reanalysed as *sand + wich*, as in *duckwich* [1943] and *turkeywich* [1943] (Algeo 1991: 6), *bagelwich*, *croissanwich* [n.d.] (Lehrer 2007: 123).
- *-furter* ← *Frankfurt-er* (from *Frankfurt*), re-segmented as *frank + furter* (Marchand 1969: 213), as in *krautfurter* [1949] 'a frankfurter topped or stuffed with sauerkraut' (OED3), *chickenfurter*, *shrimpfurter* [n.d.] (Lehrer 2007: 120).

Re-segmentation often occurs also in wordplays or puns. For instance, on *Facebook*, users have shared a post where the word *geometry* (originally from the two neoclassical combining forms *geo-* and *-metry*) was reinterpreted as having a final verb *try* (as *geome-try*, with a different pronunciation /αI/), humorously replaced by near-homophonous words in the paradigmatic substitution: i.e. *geome-cry*, *geome-why*, *geome-bye*, and *geome-die*. In this case, the splinter *geome-* was not meant to become available for new formations, but merely created for a textual (humorous) function, to obtain funny occasionalisms, not intended neologisms.

As for the relevance of a schema model in the formatives analysed in this study, from the morphological viewpoint, both frequent splinters and combining forms (or secreted affixes) belong to paradigmatic morphology, in that they trigger a schema model, based on similarity with concrete prototype words. Analogy via schema, however, excludes some of the examples included by Warren (1990) among "combining forms" (e.g. *-tro* in *outro* [1967] 'a concluding section' OED3, after *intro*(duction)) or by Bauer et al. (2013) among "splinters" (e.g. *-o* in *speako* [2001] 'an error in speaking', after *typo*(graphical error)). In the model of analogy adopted here (see § 2.1), *outro* is a case of surface analogy, with a unique model *intro*, whereas *-o* has limited productivity (see *writo* [1993], *thumbo* [2009] in *Wordspy*, but unattested in the OED or in corpora such as COCA/NOW).

As far as profitability is concerned, some splinters (e.g. final *-burger*, *-ercise*, *-gate*, *-gram*, *-holic*, *-kini*, *-speak*, *-ware*; initial *docu-*, *eco-*) have become regular, productive, and are frequently reused for still novel formations. Thus, they illustrate cases where profitability works at its best. Others remain surface analogies (e.g. *-tro*), or are limited in productivity (e.g. *-o* 'an error' vs. slang *-o*; cf. *-wich*, *-furter*, which are not as productive as *-burger*), and still others (*geome-*) are simply used once, in wordplays, and die as soon as they have been created.

Therefore, the former productive splinters have acquired a morpheme status, become secreted affixes or (secreted/abbreviated) combining forms and triggered analogy via schema. The latter have remained unproductive splinters used in surface analogy.

Some such cases still continue to be borderline. For instance, there is not much consensus throughout linguistic and lexicographic works as to whether elements such as *-alicious* (from *delicious*, in *babelicious* [1991] 'sexually attractive' OED3), *-rific* (from *terrific*, as in 'What a *brillerific* comp!' [1989] OED3), *-tainment* (from *entertainment*, in *infotainment* [1980] 'informative material presented in an entertaining way' OED3), *-tastic* (from *fantastic*, in *poptastic* [1992] 'excellent' OED3), etc. should be considered "combining forms" (OED) or "splinters" (Lehrer 2007, Bauer et al. 2013). According to the analysis conducted here, their generalisation and frequency in use suggest their inclusion among fully transparent combining forms.

Another case generating divergent opinions or contrasting analyses is *-arian*. In line with the OED, *nutarian* [1909] 'a vegetarian whose diet is based on nut products', *breatharian* [1979] 'a person who consumes no nutrients other than those absorbed from the air', and *fruitarian* [1893] 'one who lives on fruit' are obtained from the "suffix" *-arian*, like *vegetarian*. However, in the same dictionary, *flexitarian* [1998] 'a person who follows a primarily but not strictly vegetarian diet' (OED3) is analysed as a blend from *flexi*(ble + vege)*tarian*. This latter analysis denies the morpheme status of *-(t)arian*, which Bauer et al. (2013: 526–527) instead consider to be a "splinter" (their cover term for both blend's parts and secreted combining forms/affixes) generally referred to 'someone with a diet restriction'. This controversy could be explained through diachronic and semantic motivations. That is, while *flexitarian* contains a splinter *-(t)arian* and can be analysed as a blend, *nutarian*, *breatharian*, and *fruitarian* contain

a secreted suffix referring to 'someone with a diet restriction', after reanalysis of *vegetarian* as *vege*(table) + -(*t*)*arian*, and a secretion process which attributes a more general meaning to the latter suffix. A blend analysis is indeed impossible in many -(*t*)*arian* words. For instance, a *breatharian* is not 'a vegetarian', and in *meatarian* cited by Lehrer (2007: 126) the meaning of *meat* is even semantically incompatible with the sense of *vege*(table) in *vegetarian* [1842] 'a person who abstains from eating animal food' (OED3). Thus, in these examples, -(*t*)*arian* corresponds to the concept of secreted combining form or secreted affix, where the process involved is secretion rather than mere abbreviation.

7. Conclusion

This study has shown that the shift from a splinter to a combining form, or even to a secreted affix, is a diachronic issue. As Lehrer (2007: 121) observes: "[s]ince there is a scale from a completely novel splinter to a completely conventional morpheme, the transition from splinter to independent morphemehood is a diachronic process".

In this diachronic process, independent morpheme status is generally accompanied by a semantic process of generalisation (e.g. -(*a*)*holic* 'a person who appears to be addicted to the thing, activity, etc., expressed by the first element' OED3) or specification (e.g. -*exit* 'withdrawal from the EU'), which allows for the abstraction of secreted forms. When there is no abstraction, the splinter remains an abbreviated combining form (-*tainment*, -*umentary*; *docu*-), or a word part in blends.

Hence, the analogical model adopted here is gradual and envisages different stages for (and different types of) analogical formation. Diachronically, there were key phases in which the profitability of an element increased, the element became a fully productive, transparent morpheme and originated a series that acted as schema. Those crucial nodes determined the shift from surface analogy, with a unique model (e.g. *sugarholic* after *workaholic*), to analogy via schema, with a series of actual words as model (e.g. *workaholic*, *cake-aholic*, *chocoholic*, *foodaholic*, etc. working as model for *computerholic* or *sexaholic*). Therefore, analogy via schema may be viewed as the first step towards the development of a rule, from concrete words as model to an abstract rule-format template.

Secretion and the ensuing generalisation/specification also allow for the formation of many occasionalisms which, in spite of their ephemerality, contribute to stabilise the pattern of -(*a*)*holic* or similar formations, in their journey from extra-grammatical (blend) to marginal morphology (combining form), or even to standard grammatical rule (suffix).

As Klégr & Čermák (2010: 235) claim, "[a]nalogy is the backbone of creativity, i.e. the native speaker's ability to extend the language system in a motivated but unpredictable (non-rule governed) way which may or may not subsequently become rule-governed, predictable and productive". Frequent splinters, combining forms, and secreted affixes show this evolution from motivated but unpredictable to productive and (partially) predictable. Analogy helps creativity in this process towards productivity.

Appendix A. Secreted splinters, combining forms, and secreted affixes mentioned in the paper

Secreted	Origin	Examples
-(a)holic 'a person addicted to'	alcoholic	chocoholic, tobaccoholic, workaholic
-alicious 'embodying the qualities denoted by the first element to a delightful or attractive degree'	delicious	babelicious, bootylicious, groovalicious
-(t)arian 'someone with a (diet) restriction'	vegetarian	breatharian, fruitarian, nutarian
-burger 'patty served on a bun'	Hamburger	beefburger, cheeseburger, chickenburger
-exit 'exit from the European Union'	exit	Brexit, Grexit, Spexit
-furter 'a (highly seasoned) sausage'	Frankfurter	chickenfurter, krautfurter, shrimpfurter
-gate 'an actual or alleged scandal'	Watergate	Billygate, Dallasgate, Monicagate
-gram 'a message delivered by a representative of a commercial greetings company'	telegram	Gorillagram, kissogram, Rambogram
-kini 'beach garment worn by women'	Bikini	burkini, monokini, trikini
-rific 'embodying the qualities denoted by the first element in an excellent way or to an extreme degree'	terrific	brillerific, yoga-rific (body), splatterific (film)
-speak 'a characteristic mode of speaking'	Newspeak	computer-speak, royalspeak, techspeak
-tastic 'designating someone or something perceived as excellent or remarkable'	fantastic	choketastic, gaytastic, poptastic
-wich 'an article of food for a light meal with a savoury filling'	Sandwich	bagelwich, duckwich, turkeywich
-zilla 'a particularly imposing person or thing'	Godzilla	Bosszilla, Bridezilla, mom-zilla

Appendix B. Abbreviated splinters, combining forms, and secreted affixes mentioned in the paper

Abbreviated (initial/final)	Origin	Examples
Br-	Britain/British	Bremain, Brentry
docu-	documentary	docudrama, docusoap, docu-opera
e-	electronic	e-journal, e-publication, e-text
eco-	ecological	eco-damage, eco-problem, eco-tragedy
Euro-	European	Eurofashion, Euro-Japanese, Euromarket
nega-	negative	negademand, negatrip, negawatt
-ercise	exercise	boxercise, dancercise, sexercise
-tainment	entertainment	docutainment, edutainment, infotainment
-umentary	documentary	mockumentary, rockumentary, shockumentary
-ware	software	courseware, freeware, shareware

References

Adams, Valerie. 1973. *An introduction to Modern English word-formation*. London: Longman.

Algeo, John (ed.). 1991. *Fifty years among the new words: A dictionary of neologisms, 1941-1991*. Cambridge: Cambridge University Press.

Arndt-Lappe, Sabine & Plag, Ingo. 2013. The role of prosodic structure in the formation of English blends. *English Language and Linguistics* 17(3). 537–563.

Baldi, Philip & Dawar, Chantal. 2000. Creative processes. In Booij, Geert E., Lehmann, Christian, Mugdan, Joachim, Kesselheim, Wolfgang & Skopeteas, Stavros (eds.), *Morphologie-Morphology: An international handbook of inflection and word-formation*. Vol. 1. 963–972. Berlin/New York: Mouton de Gruyter.

Bauer, Laurie. 1983. *English word-formation*. Cambridge: Cambridge University Press.

Bauer, Laurie. 2001. *Morphological productivity*. Cambridge: Cambridge University Press.

Bauer, Laurie, Lieber, Rochelle & Plag, Ingo. 2013. *The Oxford reference guide to English morphology*. Oxford: Oxford University Press.

Benczes, Réka. 2006. *Creative compounding in English*. Amsterdam/Philadelphia: Benjamins.

Christofidou, Anastasia. 1994. *Okkasionalismen in poetischen Texten*. Tübingen: Narr.

COCA: *Corpus of Contemporary American English*. 1990–2015 (http://corpus.byu.edu/coca/) (Accessed 2017-01-05).

Crawford Camiciottoli, Belinda B. 2015. 'All those Elvis-meets-golf-player looks': A corpus-assisted analysis of creative compounds in fashion blogging. *Discourse, Context and Media* (http://dx.doi.org/10.1016/j.dcm.2015.10.002) (Accessed 2015-01-06).

Doleschal, Ursula & Thornton, Anna M. (eds.). 2000. *Extragrammatical and marginal morphology*. München: Lincom Europa.

Dressler, Wolfgang U. 1993. Word-formation: Poetic licence. In Ronald E. Asher & Simpson, James M. Y. (eds.), *The encyclopedia of language and linguistics*. Vol. 9. 5028–5029. Oxford: Pergamon Press.

Dressler, Wolfgang U. 2000. Extragrammatical vs. marginal morphology. In Ursula Doleschal & Thornton, Anna M. (eds.), 1–10.

Dressler, Wolfgang U., Mayerthaler, Willi, Panagl, Oswald & Wurzel, Wolfgang U. 1987. *Leitmotifs in natural morphology*. Amsterdam/Philadelphia: Benjamins.

Facebook (https://www.facebook.com/) (Accessed 2017-01-05).

Fradin, Bernard. 2000. Combining forms, blends and related phenomena. In Ursula Doleschal & Thornton, Anna M. (eds.), 11–59.

Franceschi, Daniele. 2013. The *cum*-construction in present-day English. *Italian Journal of Linguistics / Rivista di Linguistica* 25(2). 221–260 (http://linguistica.sns.it/RdL/25.2/Franceschi.pdf) (Accessed 2017-01-05).

Green, Jonathon. 1991. *Neologisms. New words since 1960*. London: Bloomsbury Publishing.

Gries, Stefan Th. 2004. Isn't that fantabulous? How similarity motivates intentional morphological blends in English. In Michel Achard & Kemmer, Suzanne (eds.), *Language, culture, and mind*, 415–428. Stanford: CSLI Publications.

Gries, Stefan Th. 2012. Quantitative corpus data on blend formation: Psycho- and cognitive-linguistic perspectives. In Vincent Renner, Maniez, François & Arnaud, Pierre (eds.), *Cross-disciplinary perspectives on lexical blending*, 145–168. Berlin/New York: Mouton de Gruyter.

The Guardian Online. 2017. Guardian News and Media Ltd (http://www.theguardian.com/uk) (Accessed 2017-01-05).

Hock, Hans H. 1991. *Principles of historical linguistics*, 2nd ed. Berlin/New York: Mouton de Gruyter.

Hohenhaus, Peter. 1996. *Ad-hoc-Wortbildung. Terminologie, Typologie und Theorie kreativer Wortbildung im Englischen*. Frankfurt am Main: Peter Lang.

Hopper, Paul J. & Traugott, Elizabeth Closs. 2003. *Grammaticalization*, 2nd ed. Cambridge: Cambridge University Press.

The Independent Online. 2017 (www.independent.co.uk/) (Accessed 2017-01-05).

Kemmer, Suzanne. 2003. Schemas and lexical blends. In Hubert C. Cuyckens, Berg, Thomas, Dirven, René & Panther, Klaus-Uwe (eds.), *Motivation in language: From case grammar to cognitive linguistics. Studies in honour of Günter Radden*, 69–97. Amsterdam/Philadelphia: Benjamins.

Kilani-Schoch, Marianne. 1988. *Introduction à la morphologie naturelle*. Bern: Peter Lang.

Kilani-Schoch, Marianne & Dressler, Wolfgang U. 2005. *Morphologie naturelle et flexion du verbe français*. Tübingen: Gunter Narr Verlag.

Klégr, Aleš & Čermák, Jan. 2010. Neologisms of the 'on-the-pattern-of' type: Analogy as a word-formation process? In Martin Procházka, Malá, Markéta & Šaldová, Pavlína (eds.), *The Prague school and theories of structure*, 229–241. Göttingen: V&R unipress.

Köpcke, Klaus-Michael. 1993. *Schemata bei der Pluralbildung im Deutschen: Versuch einer kognitiven Morphologie*. Tübingen: Gunter Narr Verlag.

Köpcke, Klaus-Michael. 1998. The acquisition of plural marking in English and German revisited: Schemata versus rules. *Journal of Child Language* 25. 293–319.

Ladányi, Mária. 2000. Productivity, creativity and analogy in word formation (WF): Derivational innovations in Hungarian poetic language. In Gábor Alberti & Kenesei, Istvàn (eds.), *Approaches to Hungarian: Papers from the Pécs conference*, vol. 7, 73–90. Szeged: JATEPress (http://ladanyi.web.elte.hu/derivational_innovations.pdf) (Accessed 2013-01-08).

Lehrer, Adrienne. 1996. Identifying and interpreting blends: An experimental approach. *Cognitive Linguistics* 7(4). 359–390.

Lehrer, Adrienne. 2003. Understanding trendy neologisms. *Italian Journal of Linguistics / Rivista di Linguistica* 15(2). 369–382.

Lehrer, Adrienne. 2007. Blendalicious. In Judith Munat (ed.), *Lexical creativity, texts and contexts*, 115–133. Amsterdam/Philadelphia: Benjamins.

Marchand, Hans. 1969. *The categories and types of present-day English word-formation: A synchronic-diachronic approach*, 2nd ed. München: Beck.

Marle, van, Jaap. 1985. *On the paradigmatic dimension of morphological creativity*. Dordrecht: Foris.

Mattiello, Elisa. 2007. Combining forms and blends: The case of *scape*. In Laura Jottini, Del Lungo, Gabriella & Douthwaite, John (eds.), *City-scapes: Islands of the self. Language studies*. Vol. 2. 115–130. Cagliari: CUEC.

Mattiello, Elisa. 2013. *Extra-grammatical morphology in English. Abbreviations, blends, reduplicatives, and related phenomena*. Berlin/Boston: Mouton de Gruyter.

Mattiello, Elisa. 2016. Analogical neologisms in English. *Italian Journal of Linguistics / Rivista di Linguistica* 28(2). 103–142.

Mattiello, Elisa. 2017. *Analogy in word-formation. A study of English neologisms and occasionalisms*. Berlin/Boston: Mouton de Gruyter.

Mattiello, Elisa & Dressler, Wolfgang U. Forthcoming. The morphosemantic transparency/opacity of novel English analogical compounds and compound families.

Milizia, Denise. 2014. In, out, or half way? The European attitude in the speeches of British leaders. *Lingue e Linguaggi* 11. 157–175.

Miller, Gary D. 2014. *English lexicogenesis*. Oxford: Oxford University Press.

Motsch, Wolfgang. 1981. Der kreative Aspekt in der Wortbildung. In Leonhard Lipka (ed.), *Wortbildung*, 94–118. Darmstadt: Wissenschaftliche Buchgesellschaft.

NOW: *News on the Web Corpus*. 2010–today (http://corpus.byu.edu/now/) (Accessed 2017-01-05).
OED2: *Oxford English Dictionary Online*, 2nd ed. Oxford: Oxford University Press (http://www.oed.com/) (Accessed 2017-01-05).

OED3: *Oxford English Dictionary Online*, 3rd ed. Oxford: Oxford University Press (http://www.oed.com/) (Accessed 2017-01-05).

Plag, Ingo. 1999. *Morphological productivity. Structural constraints in English derivation*. Berlin/New York: Mouton de Gruyter.

Plag, Ingo. 2003. *Word-formation in English*. Cambridge: Cambridge University Press.

Ronneberger-Sibold, Elke. 2000. Creative competence at work: The creation of partial motivation in German trade names. In Ursula Doleschal & Thornton, Anna M. (eds.), 85–105.

Ronneberger-Sibold, Elke. 2008. Word creation: Definition – function – typology. In Franz Rainer, Dressler, Wolfgang U., Kastovsky, Dieter & Luschützky, Hans C. (eds.), *Variation and change in morphology. Selected papers from the 13th international morphology meeting*, Vienna, February 2008, 201–216. Amsterdam/Philadelphia: Benjamins.

Štekauer, Pavol. 2000. *English word formation: A history of research (1969–1995)*. Tübingen: Gunter Narr Verlag.

Štekauer, Pavol & Lieber, Rochelle (eds.). 2005. *Handbook of word-formation*. Dordrecht: Springer.

Storrs, Carina. 2017. You may be a pizza-holic: Research says some foods addicting. CNN (http://edition.cnn.com) (Accessed 2017-01-05).

Urban Dictionary. 1999–2017 (http://www.urbandictionary.com/) (Accessed 2017-01-05).

Warren, Beatrice. 1990. The importance of combining forms. In Wolfgang U. Dressler, Luschützky, Hans C., Pfeiffer, Oskar E. & Rennison, John R. (eds.), *Contemporary morphology*, 111–132. Belin/New York: Mouton de Gruyter.

Wordspy – The Word Lover's Guide to New Words. 1995–2017 (http://www.wordspy.com/) (Accessed 2017-01-05).

Zwicky, Arnold M. & Pullum, Geoffrey K. 1987. Plain morphology and expressive morphology. In Jon Aske, Beery, Natasha, Michaelis, Laura & Filip, Hana (eds.), *Proceedings of the thirteenth annual meeting of the Berkeley Linguistics Society, general session and parasession on grammar and cognition*, 330–340. Berkeley: Berkeley Linguistics Society.

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